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NEW HAVEN, CONN., SEPTEMBER, 1874.

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LINES.

BY REV. JAMES K. LOMBARD, FAIRFIELD.

Read before the Alumni of the Springfield (Mass.) High School.

The smiling years ! with garments white,
And folded wings, and beckoning hands,
They pause where beauteous morning stands,
And point through rainbow gates of light
To gilded domes of fairy lands.

The loitering years ! how lags their pace ;
Those wondrous realms we yearn to find :
But nimble feet have won the race,
While we are toiling far behind.

The changing years ! a darker hue
Their trailing robes in sunlight show,
And we are changed, and some we knew
In earlier prime, no more we know.

The restless years ! we drink our fill
Of change, yet deem our lot unblest ;
Impatient years ! awhile be still
And bid your tireless pinions rest.

The cruel years ! they hear no prayer,
They will not for our pleading stay,
But with relentless grasp they bear
Our joys, our friends, our life away.

The precious years ! of worth untold
The pearls they shake from gleaming wings,
And Wisdom coins to shining gold
The dust that to their raiment clings.

The gentle years ! they bear away
Our treasures frail to safer care,
And speed the dawning of that day
When we shall find and claim them there.

The gracious years ! for us is found
Some solace for their giddy flight,
When comes the happy season round
We greet with song and cheer to-night.

We meet to night who met before,
Clasped hands and pledged ourselves anew,
Then sighed, " Perchance we meet no more,"
And said a kind, a sad adieu.

The hallowed place, the genial hour,
The mem'ries, thronging where we stand,
Shall follow with their matchless power
Each wanderer of our widening hand.

The silver threads that backward run
To where divergent pathways meet,
To night we gather into one,
And make the severed strand complete.

The upper room, the master's seat,
The face we love and reverence yet ;
The learners gathered at his feet,
The counsels they will ne'er forget.

The honeyed speech of classic page,
The exhibition's gay parade,
Mock eloquence and 'mimic stage,'
Before us all again displayed.

The happy boys, the laughing girls,
The easy tasks, the joyous play !
We drank the fabled draught of pearls,
And life was all a holiday.

Our feet have trodden rougher ways,
Our hands are stronger now than then,
And many a sounding blow conveys
The accolade that dubs us men.

We pause upon the long frontiers
That part the known and unknown lands,
And question all the silent years
What work yet waits for willing hands.

O earnest hearts and eager feet,
Shall your's be naught but restless pain ?
O eyes that strain the dawn to greet,
Shall patient watching be in vain ?

We work in our appointed place,
And He in us whate'er befall ;
His is the gift and His the grace,
And ours the joy and use of all.

Clear eye, sure hand, and frequent flow,
Bring out the Master's grand design,—
Shape lofty themes from matters low,
And rounded lives from yours and mine.

As broad the sower casts his grain,
And leaves it to its fate, content,
Through heat and cold, through drouth and rain,
The bow of promise o'er it bent,—

So falls the seed of worthy deed
Beside all waters and all ways,
Forgotten till the hour of need,
But growing after many days.

Not lost upon the pulsing air,
Not wasted on the arid sands,
The winds afar the song shall bear,
And waft the seed to many lands.

HOME AND COLONIAL SCHOOLS, LONDON, ENG.

BY HON. DAVID N. CAMP, NEW BRITAIN.

The schools of the Home and Colonial Society, London, have been brought into special prominence in this country, from the fact that the methods of teaching practiced there have been introduced into many of our own schools, and have frequently been the subject of discussion at educational meetings.

With a view of improving the schools of Oswego, N. Y., the Board of Education of that city, in 1861, invited Miss M. E. Jones, of London, to come to Oswego and take charge of a class of teachers in training for elementary schools. Miss Jones had, for fifteen years previously, had charge of the training of teachers in the Home and Colonial Institution, London, and it was thought that she might introduce here some of the excellent features of that school. Her success was so great the first year, she was prevailed on to remain longer than was at first contemplated, and the class was very much enlarged. An acquaintance with Miss Jones while at Oswego, and frequent opportunities of observing the results of the methods she introduced, gave us a special desire to visit the schools in London, whence these methods were derived. The Home and Colonial Society which has done so much in improving the methods of teaching in England, and in training teachers for elementary schools, was established in 1836, for the specific work of improving and promoting the education of the poor. The educational department was placed under the guidance of Miss Mayo, the sister of the distinguished teacher, Rev. Charles Mayo, D.D., of Cheam. Dr. Mayo had several years before visited Yverdun in Switzerland, and made himself thoroughly acquainted with the system and methods of Pestalozzi, which were then exciting much interest, and to a considerable extent re-modeling education on the continent. Miss Mayo had for some years been an assistant in her brother's school at Cheam, and had made herself thoroughly acquainted with the principles of Pestalozzi, and at the same time had become one of the very first practical teachers in England. In taking charge of the educational department of the Home and Colonial Society, Miss Mayo was thus able to bring the results of careful study and a successful experience to guide the work. A class of students to be trained as teachers was first received, but the enterprise was soon extended in its plans and efforts, so as to include children of different ages, and other teachers were employed for their instruction.

The schools are situated in Gray's Inn Road, a densely populated district in London. The buildings are large, but the number of pupils is so great, that some of the rooms were quite crowded at the time of our visit. The institution comprises the following departments :

I. THE NORMAL OR TRAINING SCHOOL.

In this school were three classes of students; first, the government class of one hundred and forty

who, having passed the requisite examination, were entitled to two years' training without expense to themselves and were known as Queen's scholars; second, there were a few young persons qualifying themselves, for private families or superior schools, who paid their own expenses. The remainder were girls under eighteen, who had passed the model schools, but had not been regularly admitted as normal students. The whole number in the Normal school was two hundred. The Normal or Training course is two years; the professional instruction given the first year, is on methods of teaching; and the second year, on organization and government. A portion of the pupil's time is passed in the model schools and schools of practice, but much time still remains for study and recitation! This, for the first year, is allotted as follows: The number of hours each week given to religious instruction and church history is 8; language, 4 to 5; arithmetic, $4\frac{1}{2}$; geography, 3 to 4; drawing, 2; music, 2; history, 1; reading, 2; writing, 1; natural history, $1\frac{1}{2}$; domestic economy, 1; needle work, $1\frac{1}{2}$; drilling, $1\frac{1}{2}$; and object-lessons, $1\frac{1}{2}$ hours for a part of the year.

The lessons on the principles of teaching are given by the head master in the form of familiar lectures, the notes of which were shown us. The students take notes and write out these lectures quite fully. The lessons on the practice of teaching are given by the master of the model schools, who during the year gives illustrations for the normal students: in reading, 6 weeks; in arithmetic, 7; geography, 5; grammar or language, 4; moral instruction, 4; object-lessons and common things, 4; natural history, 5; and writing and dictation, two weeks. These lessons consist of model lessons to children before the teachers' classes; of examinations or questioning on these lessons, and of notes or sketches drawn up by the normal teachers and corrected by the model-school master.

2. THE MODEL SCHOOLS.

These schools include the model infants' school, which receives children under eight years of age; the model juvenile school, having pupils from eight to fifteen years of age; the model mixed school, and the model high school. The model schools are designed to show the practical working of the system, and to exhibit, not only to the students and teachers, but to others, standards, or models, for imitation. In the infant school, which often contains very young children, the aim is not so much to communicate knowledge, as to form good impressions, correct bad habits, cultivate attention, and

prepare the children for successful future progress. The lessons given are on religious and moral subjects, color, form, size, number, animals, plants, the sounds of the letters, common objects, and, in general, embrace the whole system known as "object-teaching." In the juvenile school, the subjects are similar, but include more, and are presented in a more continuous and systematic manner, holding the attention longer, and giving more exercise to the reasoning faculties. The lessons in this school are partly prepared from books before coming into the class, and the children, to a considerable extent, after reciting the lesson prepared, and receiving instruction on it, reproduce it in writing. There are classes in reading, writing, etymology, arithmetic (mental and written), elementary geometry, geography, natural history, English history, drawing, writing, and vocal music. There are exercises, apparently every day, designed to give general information on the properties of matter, arts and manufactures, elements of architecture, money matters, and political economy. The girls are taught needle work, and the boys take gymnastic exercises separately. The recitations in the model schools evinced great quickness of perception, fixed attention, and a good knowledge of common objects and the general affairs of life. We listened to a very interesting Scripture exercise on the Feasts of the Jews and the appointments of the priesthood. Passages from Leviticus and Hebrews were read; the master then stood by the blackboard, drew a diagram, put down the principal points of the lesson, and explained the difficult parts until the class of thirty seemed to understand it, and could give the outline. A similar method was pursued in teaching and illustrating other subjects. The model schools are at all times open to the public.

3. THE PRACTISING SCHOOLS.

These schools consist of four or five sections each, of infants and juvenile pupils, and are designed to afford the normal teachers an opportunity to practice teaching. There were four or five rooms under the supervision of thoroughly competent superintendents. The normal pupils were in these rooms—a part teaching classes, a part observing and taking notes for criticism. Some of the classes appeared to be well taught; there was promptness in answering, life and animation in the whole exercise, while others were less interesting, either from the lack of knowledge or tact on the part of the teacher, or from the abstruseness of the subject. Whenever the interest of the children seemed to flag, the superintendent of the room

would throw in a question, or, if necessary, take the class entirely into her own hands and give interest and life to the exercise. In the infant department the children are in school twenty hours each week. This time is so allotted to different subjects as to give $3\frac{1}{2}$ hours to reading; $3\frac{1}{2}$ to needle work (girls); 3 to Scripture lessons; $2\frac{1}{2}$ hours each to number and sectional gallery lessons, and the remainder of the time to "kinder garten" lessons, moral instruction, and singing. The lessons are changed each day, and are usually from 15 to 20 minutes long.

RESULTS.

We passed two days in these schools, listening to recitations, studying methods, observing the operations of the system in all the departments, and noticing especially the peculiar features which have given these schools prominence. The Pestalozzian system, modified as it has been by experience and to suit the English mind, appeared to be quite successful here. The model school, which is perhaps the finest exponent of the system, exhibited good results. The pupils of this school were mostly from the middle classes of society. They appeared to be intelligent, with active minds, and both in recitation and in general deportment would have compared well with the best schools in this country. The answers evinced not only a thorough acquaintance with the subject, but an amount of collateral knowledge which would hardly have been expected in an American school composed of pupils of the same age. The recitations in the practice school were less satisfactory, but as this school is composed chiefly of children from the lower classes, and is taught mostly by inexperienced young ladies from the training school, the same results were not expected. Still, it could be easily seen in this school, that every step of the course had been carefully worked out, and was made to conform to well established principles.

We afterwards witnessed the successful application of the system in the Battersea Training College, the schools of the British and Foreign School Society, at the Borough Road and at Stockwell, and some others, in all of which good results appeared to be secured. The master of one of the largest normal schools, however, stated that the system had been tried awhile in the schools with which he was connected, but the success did not warrant its continuance; but even here, and in other English schools not adopting the whole system, many of its features were exhibited, and we have no doubt that it might be easily proved that many of the schools of England have been leavened

by the influence which has gone from this institution of the Home and Colonial Society.

TEACHING vs. CRAMMING.

BY F. H. DEAN, PUTNAM.

In our day, as in times past, one of the great drawbacks in our educational progress is faulty teaching, and this arises from the fact that the teacher does not always comprehend his work. The pupil is often measured by the amount that can be poured into him, and if he readily swallows all the difficult rules in arithmetic, and commits to memory whole pages in history ready to be drawn right out of him whenever quantity is called for, it is thought the highest success is attained. Those that teach by this principle have much to learn before they can comprehend the rudiments of the profession. Indeed, some can never learn this truth, because their own education is of this faulty character, and their habits of thought are slipshod and superficial.

The first great study of the teacher, after his own mind is prepared, should be the mind he is to teach; the nature of a young mind, and its natural development. This topic has been so many times enlarged upon that I need only hint at these principles.

At first, of course, the perceptive powers almost alone work. Hence the primary teacher has a different work from the grammar-school teacher, and in the intermediate courses are varying methods. But here is the great fact to bear in mind: that whereas the perceptive powers are the first to act, and are the more easily aroused, we have a lever with which to work upon the pupil to advantage.

Now the object is not to have spread out before the child all that other brains have mastered, and let him receive this through the medium of the memory into a passive brain, to lie there like water in a stagnant pool, but to develop the reasoning faculties and arouse the brain to stir up what it receives, to reach for hidden truth, so that one principle will attach itself to another by the mind's own work, thereby defending itself against error, just as the hands that obey the same mind will take a little snowball that they can hold in their fists and by rolling it through the fields form a pile behind which the boy defends himself against the peltings of his fellows.

Teaching, therefore, should be a developing process; and the word teacher does not more fully express the work than the word director, for the

latter word seems to indicate the work of the true teacher quite as much as the former.

Now, presuming we have succeeded in awakening the desire for knowledge, how shall the pupil be directed in the attainment of facts? The first thing to observe is, never allow a pupil to pass over any topic without understanding the full reasons for all the steps involved. Not only should the student know the reason for each step, but be drilled in giving both oral and written explanations of those steps. Persons but half know those things which they cannot explain, while the practice of making clear to others strengthens an individual's own mind.

In this connection, observe the necessity of class drill. Many teachers, especially in country schools, where there is no wide-awake supervision, often fall into the error of having set times only for review lessons. Pupils may learn, for instance, a principle in arithmetic to-day, another to-morrow, and so on, without discerning the connection those principles have with one another. Frequent lively class exercises serve to overcome such difficulties and unite all these isolated principles in the mind into a beautiful science.

Analogous to this is the necessity of having the pupil understand definitions of rules and words. I am sure one fault in most schools is the too infrequent use of the dictionary. If words and terms are understood, the key is in hand to unlock the mystery.

From the foregoing I argue that such an exercise as the following is valuable:

T.—*Ava, what is a word?*

A.—The sign of an index.

T.—*What do you mean by a sign?*

A.—I mean symbol.

T.—*Well, define your definition.*

A.—Symbol means an emblem or representation of something.

T.—*Give an example.*

A.—A sceptre is the emblem of power.

T.—*What do you mean by the word idea?*

A.—The model or picture of something in the mind.

T.—*Now give your own definition of a word.*

A.—A word is the emblem for a picture in the mind.

T.—*Nettie, what is a sentence?*

A.—An assemblage of words expressing a thought.

T.—*Taking Ava's definition of an idea, how does a thought differ from an idea?*

Ans.—An idea is a picture in the mind, and a thought is what the mind says about the picture.

T.—Alice, what picture have you in mind?

Ans.—A bird.

T.—What do you call the picture?

Ans.—An idea.

T.—What does your mind *say* about the bird?

Ans.—The bird sings.

T.—What do you call this action of the mind concerning the bird?

Ans.—A thought.

T.—Princess, which is in the mind first, the idea or thought?

Ans.—The idea.

T.—Illustrate this in some way by things you can see around you.

Ans.—The artist must see the landscape before he can paint it.

T.—Well, we have been speaking of the mind; what is the definition of mind?

Ans.—It means the intellectual or reasoning faculties.

T.—Frank, what is the next division of composition above the sentence?

Ans.—The paragraph.

T.—Define paragraph.

Ans.—It is that portion of composition that treats upon a single point of a subject.

T.—Do you understand the words used in your definition?

Ans.—Yes sir.

T.—Define portion.

Ans.—Portion means a part.

T.—What division comes next?

Ans.—The chapter.

T.—Define.

Ans.—A chapter is a division of a book or composition.

T.—Is not this definition applicable to the paragraph?

Ans.—Yes, sir; but the chapter is a more general division of a subject than a paragraph.

And thus we may go on indefinitely, until these young minds become quick, correct, and polished. Class drills make work for teachers, and are not always appreciated by communities where fathers and mothers were instructed in their day by strict adherence to text-book questions and answers, but there is a satisfaction in work well done.

One member of the junior class of Dartmouth College is a clergyman about 50 years old. He is married, preaches, and has gray hairs.

NEW METHOD OF MANAGING CLASSES AT RECITATION.

BY H. L. GARD, NORWICH, CONN.

The advantages of classification can hardly be overestimated, yet individual needs are sometimes overlooked in large classes. In any class of scholars, notwithstanding the most careful grading, there will be some in advance of others, some whose judgment is more mature, whose perceptions are more acute to grasp any new principles presented to the teacher. Is it best to detain those who evidently understand the particular points of the review to which attention is being called, as well as the lesson of the hour? We will offer a few suggestions on the negative side of this question. Who does not remember the weary looks of those who are waiting for the dull ones of the class? Scholars while thus waiting fall naturally into mischief, or wait in misery till the time when they can pass and prepare for future recitations.

Nor is the evil remedied by using the brighter pupils to explain to the more backward; their presence is a reproach to these last. Very pleasant it is for us teachers to address ourselves to those who comprehend at once, but it is our duty to explain to the dull scholars, though in answer to the question "Do you see it now?" comes the sad, or, may be sullen, "no sir." The writer cannot forget the unhappiness he experienced when a pupil, during certain mathematical recitations, when in answer to a question the forward scholars would be sent to the board to *do* the problem with a triumphant flourish.

The true test of ability in a teacher, is not to push along the scholars quickest to learn, nor to help those only who help themselves, but to bring up the class, the school, as a whole, and especially to guide those to the light who know not the way. But some teacher will say "Will not scholars passing haphazard to their seats cause confusion?" Not as much noise is made by a class passing singly, as together, while scholars elated by being permitted to pass, will go quietly, and perhaps learn another lesson before the time allotted for the recitation has expired.

By this plan the dull scholars are always caught in a trap at each recitation, and those who most need it will get the greatest benefit from reciting. Care must be taken to bring forward everything to come before the class, as a whole, at the beginning of the recitation; future lessons should be assigned before scholars begin to pass to their seats.

THE STUDY OF ENGLISH.

BY PROF. HENRY N. DAY, NEW HAVEN.

There prevails a very general demand that more time be given to the study of English in our schools and colleges. The demand is founded in reason. Whether the one or the other of the two great ends in education be regarded—immediate utility, or permanent mental discipline and growth—the study of English can fairly be paralleled with any other branches of study in promise of benefit and in importance. But it is needful to have a clear understanding of what "the study of English" is, and what its proper objects or aims and methods as well as what is its admissible extent in our educational institutions.

The "study of English" means the study of English language and literature; and the objects or aims of the study are two-fold—right apprehension, and right use. Here, as everywhere, education needs to keep distinctly in view these two sides of mental activity—the apprehensive and the productive. And there are the three more subordinate objects or aims to be kept distinctly in view under each of these more generic aims—the purely intellectual, the aesthetic, and the moral. Not only should the study of English aim to give the ability to understand what is written or spoken, but also to awaken the taste and sensibility to an appreciation of its forms, and to quicken the moral sense to what is pure and good in its proper effects or results. A dry understanding of language and literature is attainable only as the taste is enlisted in the enjoyment of what is beautiful and wonderful in the structure of the language and the character of the literature; or if it were attainable, without this incitement from the taste or aesthetic sense, the benefit and satisfaction from the study would be missed to a greater or less extent. The more moral bearings and uses concerned in the study, if more obscure and more evasive to our apprehension, are not less real or less important. Human speech has a high moral import and end; and in the study of it this aspect should never be lost sight of. Perhaps the chief reason why the study of English has been so unsatisfactory to teacher and to pupil is to be found in this neglect of the aesthetic and moral elements that should ever be regarded in this study in connection with what addresses merely the understanding. Let it ever be borne in mind that the forms of language are as truly admirable as the forms of the natural world—of crystals or flowers—and that the uses and bearings on human welfare are as real and as discernible in it as in any of the arrangements or workings of the natural world. And in no study can the wise and faithful teacher hope to effect richer aesthetic and moral results in the culture of the forming spirit entrusted to his care than in this.

But the mind is not a merely receptive nature; it is productive and communicative, and this side of culture

demands distinct attention in the teacher. Not only does the pupil need to learn to understand English, to appreciate what is perfect in its forms, and to experience the moral benefits which language as the ordinance of perfect goodness is fitted to impart, but also and more he needs to learn how to use it aright—intelligibly, pleasingly, and usefully.

By the study of English then, we understand the study of the English language and literature—the elements of the English tongue and the structural relationship and also the divers products of human activity in the forms of speech. We understand it to involve the two-fold result of a capacity to apprehend it in the divers forms and with the divers aims of its addresses, and of a correlative capacity to use it aright for the various ends of speech and in the various ways in which these ends are to be attained.

As to the extent to which the study of English can be carried, we shall be able to reach a more satisfactory determination if we look at the question in the light of the four-fold distribution of the stages of culture measured off by our fourfold classification of our schools—the elementary or common school stage; the high school or academic stage; the college or seminary stage; and the university stage.

In the elementary stage we may enumerate the following as attainable results, and therefore to be sought in our common schools—to read our common literature in its lower forms of narrative and description, with intelligence of its meaning, with some sensibility to its forms, and with some regard to its beneficial influences, and to speak and write the language correctly, gracefully, and with pure moral tendencies. The attainment at this stage may be but scanty in real power; but it may be negatively well nigh complete. At the common school there may be inculcated the disposition and the power to show what is grammatically incorrect or inexpressive, what is bungling and uncouth, as well as what is coarse and vulgar.

In the High School and the Academy, to this rudimentary capacity to understand, and enjoy, and profit by books of narrative and description, and to put thought into correct, graceful, and inoffensive forms of language for the purpose of ordinary social life, there should be added the power to do this rudimentary work with conscious intelligence that the work is rightly done. In other words, the proficient in the high school or academy ought to be able to understand the grounds and principles of a right interpretation and a right use of language. He should accordingly be initiated into the nature of language, particularly here of the English language—its elements, its forms, its structure. He should understand the grammar of the language—what its alphabetic elements are and how they are classed; what its 'parts of speech' are, what their proper forms, and what the forms of thought which they are designed to express; how these parts should be put together in

the expression of thought. He should also be trained in the actual composition of simple discourse, at least so far as the grammatical construction of the sentence is concerned. The forms of poetic discourse should be acquired at this stage—what they are in their general character and use, and also in their more specific nature. From simple reading lessons the pupil should be advanced by a proper elocutionary training in recitations or declamations.

To the capacity to spell and pronounce correctly, to read with facility and ready interpretation common discourse, as well as to express simple thoughts clearly, gracefully, and effectively, acquired in the rudimentary schools, and to the ability to interpret and use language with conscious reference to the regulative principles of its use, acquired in the academy, in the third, the collegiate and seminary stage, there is to be added the higher attainment of a proper rhetorical mastery of the English literature, founded on a familiar acquaintance with the structure and history of the words of the language, the peculiar forms of English sentence-construction, and also the nature of discourse as the expression of rational thought—its elements, its kinds, its regulative laws. The study of English words should here be so conducted that the pupil shall come to feel that the history, the constituents, the relationships of every word in the vocabulary are within the range of his ability to know, just as the proficient botanist feels himself able to enter any flora and to ascertain all that is to be known of the character, parts, and relations of any flower in it. He should acquire the power to recognize, or to learn by the use of helps within his reach, the origin, composition, history, and use of any word presented to him, and the corresponding power to use each word with the conscious assurance of using it in accordance with its proper significance. In other words, a true word power, so far as his vernacular speech is concerned, should be acquired. Similarly the nature and history of the English sentence-construction should be learned by the right study of the actual forms in use from age to age, in the progress of our literature. The rhetorical construction of discourse is to be continued with this mastery of the word and the sentence, so that in the actual production of discourse the mind may work in conscious assurance of its being on the right path, having a rational end in view, to be reached in a rational way.

The University stage in the study of English will add the philosophy of the English language and literature in its relations to other human dialects and literatures, pursued in the light of the sciences of Comparative Philology, of Logic or the science of the nature and forms of thought, of Comparative History explaining the peculiarities in the forms of English literature, as well as of Æsthetics, or the philosophy of taste, and also of Ethics or the science of right human activity in the several spheres of its exertion.

YOUNG TEACHERS' DEPARTMENT.

SCHOOL INCENTIVES.

BY HON. E. E. WHITE, OHIO.

In every school study and good conduct are secured by the use of incentives, good or bad. Every act or purpose springs from some motive, the character of which determines the influence of the act or purpose on the pupil's moral life. If the pupil's motives be low and selfish, his moral nature will thereby be debased, and this is true whatever may be the appearance of his external conduct.

This view discloses the paramount importance of right incentives in school instruction and government—an importance not fully recognized, and a subject very imperfectly understood. It is not enough that the teacher manages to secure diligence in study and good order. These results must be attained by an appeal to motives which quicken the child's sense of right and duty, and develop and nourish his higher moral nature. Neither a temporary interest in study nor external propriety of conduct can compensate for the sacrifice of those higher principles of character, which are of slow growth, but of abiding potency and value. It is an easy thing to hedge in a child's conduct by punishments and to urge him forward by artificial rewards, but when the restraining hedge is broken down and the temporary excitement is wanting, then is seen the need of the power of self-guidance and self-impulsion—an in-dwelling monitor and a never-failing impulse. The most dangerous of transitions is that which carries a youth from the restraints of outward control to the non-restraints of a condition of untried liberty. The school life of a pupil should prepare him to be a self-governing being.

With these principles in mind let us try to distinguish between right and wrong incentives, and determine the relative worth of the former.

The first and most obvious classification of incentives is their separation into *natural* and *artificial*. Natural incentives are those which spring from the nature of the effort or acquisition, following success or attainment as a natural result, if not a necessary consequence. Artificial incentives are those rewards or incitants which are thrust between the pupil and the natural results of his efforts. Their prime characteristic is, that they are artificial substitutes for those higher rewards which flow as consequences from all right action, and, as such,

they become the immediate end of study and conduct.

Among the natural incentives are :

- The joy of duty done.*
- The pleasure of self-control.*
- The inward reward of obedience.*
- The satisfaction of success.*
- The hope of future good.*
- The desire of knowledge.*
- The pleasure of its acquisition.*
- The satisfaction of overcoming difficulties.*
- The desire to excel.*
- The approval of others.*
- The approval of conscience.*
- The approval of God.*

A little reflection will show that each of these incentives is the natural result or attendant of some duty or achievement of school life. The human soul is so constituted that every right act or possession brings with it a joy, a satisfaction, or an anticipation, and this is both a reward and an incitant. What is needed ordinarily to make this natural reward conscious and potent, is the assurance of full success or complete attainment. The child submits his acts or acquisitions to the superior judgment of parent or teacher. If approved, the assurance of success brings a conscious satisfaction, joy, or hope. His reward is thus made sure. For the same reason men seek the approval of their peers or superiors. They desire to have their success tested by some standard without or above them. Such approval removes self-distrust, and makes rewards operative and satisfying, which might otherwise lack potency.

This view enables us to place among natural incentives all expressions of approval which furnish palpable evidence of success. Among these are :

The expressed approbation of the teacher.

The attainment of an assigned standard.

That these may be natural incentives, they must be signs or measures of actual success, and must be so awarded and received. When they become the *end* of the pupil's efforts, when he ceases to look up from the shadow to the substance, then they are no longer natural rewards. In some of our graded schools the desire to reach high marks is the "ruling passion" with the pupils. They study for "percents" and *cram* for "percents."

Among natural incentives we should probably also place :

An advancement in studies.

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These are the natural rewards of successful effort, and yet they may be so impressed on a school as to take the place of ultimate ends, thus becoming

the most potent of artificial incentives, concealing or destroying those nobler rewards which border the path of duty.

Among artificial incentives may be included :

Prizes of pecuniary value, as books, medals, etc.

Immunities, as exemption from tasks, examinations.

Privileges, as holidays, early dismissal from school, choice of seats, etc.

It is evident that neither of these three classes of rewards is a natural consequence of the pupil's success or attainments. They are all artificial and temporary substitutes for those rewards which are worthier and more enduring. But they do not lack power. They may be so incorporated into a system of school management as to become its very life—the all-absorbing end of effort and desire.

It will be noticed that we have not included punishment among school incentives, natural or artificial. Its office is to restrain, to impel; it does not incite. It is the reserved force which is brought up when incentives fail.

This simple classification of incentives prepares the way for a consideration of their relative worth and proper use.

It will be generally conceded, we think, that natural incentives are intrinsically superior to artificial. They nourish and strengthen the higher principles of character and, at the same time, act through life, springing up spontaneously in the path of duty and success. If made potent in childhood, they usually remain effective in after life. Artificial incentives, on the contrary, are transient and treacherous. They allure in youth, but fail in life's needs and conflicts. The child always incited to duty by some prize, immunity, or privilege, depends in vain on such helps in manhood. When school-days are over, if not before, knowledge must be sought for its own sake or for its uses, and neither virtue nor integrity holds in its hands a bribe.

These facts not only indicate the superior worth of natural incentives, but they show the importance of their use in the instruction and control of children. The teacher should appeal to motives that have an abiding power and value, and, through such motives, he should strive to quicken the pupil's sense of right and duty. Certainly, so long as natural incentives can be made effective in securing study and good conduct, they should be relied upon.

This suggests the proper use of artificial incentives. They are to be resorted to, if at all, as temporary expedients to lift up a pupil or a school to the plane of higher motives. A teacher placed in

charge of a badly-demoralized school, dismissed all pupils whose conduct was good a half-hour before the regular time for closing school. This was done at first each half day : then once a day ; but, as soon as she had the school well in hand, the practice was wholly dropped. We have seen whispering and tardiness checked in the same manner, the incentive of an early dismissal or a half holiday being used to *prepare the way* for better motives. It is evident that a dismissal before the close of school as a reward will prove, for such a purpose, much more effective than a detention after school. But to use such means when natural incentives can be made effective, is needlessly to sacrifice the higher principles of moral training. Incentives intrinsically wrong are, of course, never to be used.

It may be stated as a general principle that lower incentives are always improperly used when the higher would be equally effective. Lower incentives may be necessary and proper in controlling a school of savages, but as fast as the savage nature is overcome, the higher should be appealed to. The uses of lower incentives should be temporary, and they should be made preparatory to those which are higher and nobler. Of two motives equally effective, the higher should always be placed before the pupil.

There is a difficulty in carrying out these principles in large schools, owing to the great difference in the character of the pupils. Motives effective with the majority may fail to control or impel the minority, or *vice versa*. In trying to obviate this difficulty, teachers are liable to make the serious mistake of placing low incentives before an entire school, in order to reach a few pupils. The true course is to grade incentives up to pupils, and not pupils down to incentives. Here, as elsewhere, there must be a wise adaptation of means to condition, even at a sacrifice of uniformity.

Among proper incentives most liable to abuse are merit-marks and tickets—incentives in very general use in our schools. The true design of the Marking System, as it is technically called, is to give the pupil a definite and tangible *measure* of his success. To this end the character of his recitations and conduct is marked daily on a numerical scale, and averages are made monthly, or oftener, showing his standing. The value of this record depends, of course, upon its accuracy. When it fails to indicate the pupil's actual success, it loses its historical character and misleads. The same is true of tickets, when bestowed as evidence of the teacher's favor and not of the pupil's merit.

But the special abuse to which merit-marks and tickets are subject, is the making of them the immediate end of the pupil's efforts. In some schools "percents" are so magnified that they completely hide what they represent, and the pupils work for them as if they were wages. Sometimes the attainment of a specified standard is rewarded by class rank, by a holiday, or by some other privilege. The attention is thus diverted from the true ends of study ; the pupil is tempted to cram, if not deceive ; and the teacher to mark too high.

The above discussion shows why it is that some teachers fail to develop a manly and noble character in their pupils. They treat them as ninnies or savages, incapable of noble impulses, and callous to all appeals of conscience and right. The path of duty is hedged about with artificial rewards, and the way of disobedience is made to bristle with artificial punishments. Between the pupil and every duty is thrust some false incentive, as a credit-mark, a ticket, a holiday, or prize, and this becomes the immediate end of study or aim of conduct. That such a system should fail to quicken the conscience or nourish a high sense of duty, is not strange. The pupil's moral nature is fed on husks.

—Ed. Nat. Teacher.

SYLLABICATION.

BY PROF. H. N. DAY, NEW HAVEN.

The syllable is properly oral, and comes under the principles of orthoepy. But we have also the written syllable, which of course must come, to some extent at least, under other principles. We have in fact the orthoepic—the oral or spoken syllable—which is the true and proper syllable, and also the orthographic syllable—the literal or written syllable, simply representing the oral.

What we intend to say is restricted to the mere manner of dividing the syllables of a word in writing. There is diversity of usage here, showing that the regulative principles in the case have not been maturely considered. British usage in many serious respects differs from prevalent American usage ; and American writers and typographers are not altogether agreed among themselves. The English press divides thus : *ta-lent, ha-bit, gene-ral, ob-trus-ive*; while some respectable American publishers print *En-gland*,—syllabic divisions revolting to other American printers. It is a question, then, of some interest to writers and to printers : What are the principles which should govern in orthographic syllabication ? Can they be stated so as to command, assert, and regulate practice ?

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What we intend to say is restricted to the mere manner of dividing the syllables of a word in writing. There is diversity of usage here, showing that the regulative principles in the case have not been maturely considered. British usage in many serious respects differs from prevalent American usage ; and American writers and typographers are not altogether agreed among themselves. The English press divides thus : *ta-lent, ha-bit, gene-ral, ob-trus-ive*; while some respectable American publishers print *En-gland*,—syllabic divisions revolting to other American printers. It is a question, then, of some interest to writers and to printers : What are the principles which should govern in orthographic syllabication ? Can they be stated so as to command, assert, and regulate practice ?

We think that without question the predominant principle that governs all orthography, including the mode

of dividing syllables when necessary in writing or printing, is that the orthography should follow as closely as possible the orthoepy. We have accordingly this fundamental rule which should always govern, unless there is clear and valid ground recognized for departing from it: *Divide the syllables of a word exactly as they are pronounced.* The obvious ground of this rule is that written language is nothing else than the representation in writing of spoken language. The English are wrong, therefore, and the Americans are right in dividing words like the following: *tal ent, pref er ence, prob lem, mon opoly, fac ile, frig id.*

Subordinate to this governing principle we have two others founded, the one on the written form itself, the other in the nature of the word as significant. We may have *eugraphic* or *calligraphic* rules in orthography as we have euphonic rules in orthoepy. They prescribe comprehensively that words be so divided as ever to comport with the true function of the written character. The constituents of digraphs thus should not be separated; we should write *check er, con science.* It is here that we find exceptions. The digraph *ng*, for instance, in *an ger* is properly divided in writing. In like manner we write *sing le, lan guid, con quer, don key.* *Eugraphy* itself would forbid *sing le, lang uid*, etc., even if the first principle of conformity to orthoepy did not forbid. But this may safely be accepted as a second but subordinate rule in written syllabication: *Observe the proper representative character of the several letters.* Particular rules coming under this general principle are: Do not divide words by putting in different lines except when absolutely necessary; avoid, therefore, putting a single letter of a word by itself at the end or the beginning of a line, because this may generally be avoided. Do not divide digraphs, for they represent single elements of sound.

We have a third principle regulating orthographic syllabication given by etymology—by the fact that words of which syllables are elements, are significant. Written language should recognize this essential nature of words. Words therefore should be divided so as to separate stems from affixes. In the application of this principle Americans restrict themselves to words of proper English formation, while the English extend the principle to foreign derivations. American typographers divide accordingly *abus ing* but *abus ive*, because *ive* is not a proper English affix. The English write *abus ive.* But to carry the observance of the rule into all words of whatever origin would require in the typographer the science of the eminent linguistic scholar. The only line of limitation is that which separates proper English derivation from that belonging to foreign tongues. Moreover, writing and printing in English is for English-speaking people. Therefore the proper rule from etymology is: Divide in accordance with the etymological formation of the word so far as governed by proper English speech.

We have accordingly, then, three rules of orthographic syllabication. First, divide syllables as they are pronounced; secondly, observe the representative character of letters by avoiding the unnecessary division of words, and the separation of digraphs. Thirdly, in subordination to the above rules, divide so as to show in proper English derivations, but in no others, the stem or root-part of the word from the prefix and suffix.

The difficulties arising in syllabication will most of them be determined by a fair application of these rules. The other difficulties, for the most part at least, arise from doubtful pronunciation. For the removal of those recourse must be had to orthoepy, since the sole function of orthography is to represent what is spoken, and must depend therefore on orthoepy.

MISCELLANY.

DISTANCES OF THE STARS.

BY CAMILLE FLAMMARION.

[Translated from the French of *La Nature*, by J. Fitzgerald, A.M.]

Since the beginning of this century, our idea of the universe has undergone a complete metamorphosis, though but a few persons appear to recognize this fact. Less than a century ago, the *savants* who admitted the earth's motion (some still rejected it) pictured to themselves the system of the universe as being bounded by the frontier of Saturn's orbit, at a distance from the central sun equal to 109,000 times the diameter of the earth, or about 860,000,000 miles. The stars were *fixed*, spherically distributed, at a distance but a little greater than that of Saturn. Beyond this limit a vacant space was supposed to surround the universe. The discovery of Uranus, in 1785, did away at once with this belt, consisting of Saturn's orbit, and the frontier of solar domination was pushed out to a distance of 1,900,000,000 miles from the center of the system, that is to say, beyond the space which was vaguely supposed to be occupied by the stars. The discovery of Neptune, in 1846, again removed these limits to a distance that would have appalled our fathers; the orbit described by this planet being 2,862,000,000 miles from the sun.

But the attractive force of the sun extends farther still. Beyond the orbit of Uranus, beyond the dark route slowly traversed by Neptune, the frigid wastes of space are traveled over by the comets in their erratic courses. Of these, some, being controlled by the sun, do not leap from system to system, but move in closed curves, though at distances far greater than those of Uranus and Neptune. Thus Halley's comet recedes to a distance of over 3,200,000,000 miles from the sun; the comet of 1811, 36,000,000,000; and that of 1680, 75,000,000,000. The period of the last named comet is 8,800 years.

Still these figures can scarcely be compared to those

which represent the distances of the stars. What means have we of measuring these distances? Here the diameter of the earth will not serve as the base of the triangle, as when we measure the moon's distance; nor can we, as in the case of the sun, get any assistance from another planet. However, fortunately for us, the arrangement of our system affords us a means of measuring these distant perspectives; and this, while demonstrating over again the earth's motion round the sun, turns that motion to account for the solution of the greatest of astronomical problems.

In revolving round the sun, at the distance of 92,000,000 miles, the earth annually describes an ellipse of about 500,000,000 miles. The diameter of this orbit is 184,000,000 miles. As the earth's revolution round the sun is performed in a year, the earth, at any given instant, will be opposite to the point where it stood six months before, as also to the point where it will stand six months later. Here is a line of sufficient length to serve as base of a triangle the apex of which shall be a star.

The process, then, for measuring the distance of a star from the earth consists in minutely observing this star at an interval of six months, or better, for a whole year, noting whether it remains fixed, or whether it undergoes some little appreciable displacement of perspective, owing to the annual displacement of the earth around the sun. If it remains fixed, this is because it is at an infinite distance from us—at the horizon of the heavens, so to speak—and our base-line of 184,000,000 miles is as nothing in comparison with this remoteness. But if it is displaced, then we know that it annually describes a small ellipse, corresponding to the annual revolution of the earth. Every one has remarked, while traveling by rail, how the trees and other objects near at hand move in a direction contrary to our own, their speed being greater in proportion to their nearness; whereas distant objects on the horizon remain fixed. This same effect is produced in space, in consequence of our annual motion round the sun. But though we move incomparably swifter than an express train, our rate being 1,632,000 miles per day, and 68,000 per hour, the stars are so distant that they scarcely budge. Our 184,000,000 miles of displacement are almost nothing as concerns even the nearest of them. The inhabitants of Jupiter, Saturn, Uranus, or Neptune, with their orbits five, nine, nineteen, and thirty times as large as ours, could determine the distance of a far greater number of stars than we.

This mode of measuring the distance of the stars by the perspective effect produced by the earth's annual displacement was anticipated by the astronomers of the eighteenth century, and in particular by Bradley, who, while in attempting to measure the distances of the stars by comparing together observations made at an interval of six months, discovered—something else. Instead of finding the distance of the stars on which his

observations were directed, he discovered a very important optical phenomenon, viz., the *aberration of light*, the effect produced by the motion of light and the motion of the earth combined. Similarly, William Herschel, while seeking the parallaxes of the stars by comparing bright stars with their nearest neighbors, discovered the systems of double stars. So, too, Fraunhofer, while seeking the limits of the colors in the solar spectrum, discovered the absorption rays, the study of which has given rise to Spectrum Analysis. The history of the sciences shows that frequently discoveries have been made in the course of investigations which had but little to do with them directly. Columbus discovered the New World while aiming to reach the eastern coast of Asia by sailing to the west. He would never have discovered it, would never have sought for it, had he known the true difference between Portugal and Kamtchatka.

It was not till 1840 that the distance of any of the stars was ascertained. This discovery is, therefore, of recent date, and we are only now beginning to form an approximate idea of the real distances which separate us from the stars. The parallax of the star 61 in the Swan, which was the first to be determined, was ascertained by Bessel, and was the result of observations made at Königsberg from 1837 to 1840. In 1812, Arago and Mathieu had made observations on this star, but without reaching any certain results. The parallax of Alpha in the Lyre was found by Struve, in the course of observations made at Dorpat between 1835 and 1838; but it was not published till after the year 1840. The same is to be said of Alpha in Centaur, observed in 1832 and in 1839 on the Cape of Good Hope by Henderson and Maclear; this is the nearest to us of all the stars.

There are two ways of determining these parallaxes. The first is, to compare together the positions observed at intervals of six months; the other, to discover an apparent motion in a star (as compared with a motionless star situated at a far greater distance than that which is studied): this apparent motion being due to the perspective produced by the annual revolution of the earth in its orbit. This is the method mostly employed now. Galileo, in his "Dialogues;" Gregory, in the "Proceedings of the Royal Society" (1675); Huyghens, in his "Cosmotheoros," published in 1695; Condorcet, in his "Eloge of Roemer," in 1773; and William Herschel, in 1781, have described both methods. Hooke, Flamsteed, Cassini, Bradley, Robert Long, Herschel, Piazzi, and Brinkley, strove, from 1674 to 1820, to determine the small quantity of the apparent movement of the brightest stars, which used to be regarded as the nearest; but their efforts were fruitless, owing to the inconsiderable amount of this motion. There was need of instruments of the utmost precision, a rigid spirit of observation, and an indomitable patience, in order to get at trustworthy results.

Since 1840 the attention of astronomers has been oftentimes directed to this investigation, and thousands of calculations have been made. With great difficulty astronomers have succeeded in determining the parallaxes of *a few* stars. But the inevitable errors of observation often involve the results in obscurity. Let the reader only bear in mind that there is not *one* star that is sufficiently near to give us a parallax of *one second!* A second is the dimension to which would be introduced a circle one metre (3 ft. 3.37 in.) in diameter carried away to a distance of 206 kilometres (127.72 miles) from the eye. This appears to be less than nothing; it is equal to the thickness of a hair stretched at the distance from the eye of 20 metres (74 feet). The apparent annual movement of a star, whose distance can be known, is performed altogether within this infinitesimal space. For an observer on the star that is nearest to us, this hair would conceal the whole space between the earth and the sun.

As no star offers a parallax of one second, it follows that the nearest of the stars is distant from earth no less than 206,265 times 92,000,000 miles. The space which surrounds the planetary system is void of stars to that distance at least.

The star which is nearest to us, Alpha of Centaur, has a parallax of 0."91. Its distance from earth is 226,400 times the radius of the earth's orbit, or 21,000,000,000,000 miles. This is our *neighbor* star, and its distance is probably the minimum distance between star and star—21,000,000,000,000 miles. Each of these stars shines with its own light—is a sun like our own.

The second star, in the order of distances, is 61 Cygni. Its parallax is 0."51, and its remoteness 37,000,000,000 miles.

Of the thousands of stars which have been studied, we know the distances of only twenty. Among these we may signalize Sirius, a sun 2,688 times larger than our own, surrounded by a system of heavenly bodies, several of which are already known, and distant from us 82,000,000,000 miles; the Polar Star, which is a double star, distant 292,000,000,000 miles; and Capella, distant 425,000,000,000—a space which is traversed by light in seventy-one years and eight months; so that the luminous ray which reaches us from this fine star in 1874 must have started in 1803! Capella might have been extinguished in 1804, but we should see it still. It might go out to-day, and yet the inhabitants of the earth would continue to admire it in their heavens until 1946. Conversely, if there existed, on the planets gravitating round Capella, minds whose transcendent vision could thence descry our little earth, lost as it is amid the sun's rays, they would now see the earth of the year 1803, and would be seventy-one years, eight months behindhand in its history. These are the stars that are nearest to us. The others are incomparably more remote.

There are stars whose light cannot reach us in less

than 100, 1,000, or 10,000 years, though light travels at the rate of 185,000 miles per second! To traverse the sidereal world of which we form part (the Milky Way), light takes 15,000 years. To reach us from certain of the nebulae, it must travel for 300 times that period, or 5,000,000 years. Let the imagination, that is not appalled by these immensities, strive to conceive of them. If it does not experience the "vertigo of the infinite," let it calmly contemplate these abysses, and realize the position of the earth and of man in presence of them. Thus will it gain some conception of the discoveries made by sidereal astronomy.

Such are the dimensions actually measured in the general constitution of the universe. As yet we are only at the vestibule of the edifice, on the edge of the abyss of infinitude: and we shall never penetrate very far beyond.

—*Popular Science Monthly.*

POSTAL CARDS IN THE DIFFERENT COUNTRIES OF EUROPE.

The idea of postal cards is attributed to Dr. Emanuel Hermann, professor in the Vienna Military Academy. They were introduced into England in 1870, at the price of one half-penny (one cent), the letter postage being one penny. The average circulation there of these postal cards has risen to a million and a half a week. More than seventy-five millions were sent in 1871, and this number was exceeded in 1872. The number of letters mailed, so far from diminishing in consequence of the introduction of the cheaper postal card, as had been predicted, has actually increased; in place of 863 millions of letters carried in 1870, 915 millions were transported in 1871, an increase of 52 millions. This enormous increase raises the mean percentage of the annual progression, which, for the five previous years, from 1866 to 1870, had been four per cent. up to six per cent.

In Germany, the introduction of card correspondence was decreed in June, 1870, and it began practically a month later. The advantages offered by it caused it to be rapidly extended, although the price had been fixed at that time at one groschen ($2\frac{1}{2}$ cents), the same as letter postage. On the first of July, 1872, this price was reduced to one-half a groschen ($1\frac{1}{4}$ cents), letter postage remaining as before. Here also the introduction of the postal card has not interfered with the number of letters mailed, which, in place of 205 millions in 1870, became 240 millions in 1871. A most valuable addition to the postal card system, moreover, has been adopted in Germany, and has extended to Holland, to Belgium, and to Switzerland. Beside the simple postal card, a double one is also issued, having a prepaid card attached for the answer. The two cards correspond in size, each bears the stamp, and they are sold at a double price.

In Switzerland, the postal card system was adopted

in 1870, the price being five centimes (one cent). In 1871, 1,713,710 cards were sent. The letters mailed increased from 20,477,844 in 1870 to 22,563,351 in 1871.

Belgium adopted postal cards July 1, 1871, the price being five centimes (one cent). At first the system was local, but it has since become general. The number of letters sent has, as in other countries, steadily increased. On the first of January, 1873, the Minister of Public Works, under whose direction are all postal and telegraphic arrangements, ordered the issue of double postal cards having a prepaid card for the answer.

Norway has had postal card correspondence since January 1, 1872, the price at first being that of ordinary letter-postage, 9 skillings (2·9 cts.). It has since been reduced to 2 skillings within the same postal district. The results generally are regarded as satisfactory.

In Sweden, the price of the postal-card at first fixed at 12 ore (3½ cts.), has been reduced to 10 ore (2·8 cts.). In Denmark, the system was adopted April 1, 1871. The general card costs 4 schillings (2·4 cts.) and the district card 2 schillings (1·2 cts.).

In Russia, postal cards were introduced January 1, 1872. The general card is furnished at 5 kopecks (4 cts.) and the district card at 3 kopecks (2·4 cts.). In Austria, the postal card costs 2 kreutzers (one cent). The system was adopted in October, 1869, and the first year eight millions of cards were sold.

Spain has decided upon postal cards; Greece and Portugal are about to issue them; and in Italy the same course has been resolved upon. Turkey alone has failed to see the advantages of the postal system and to adopt it.

—[Journal of Franklin Institute.

AMERICAN PHILOLOGICAL ASSOCIATION.

From the proceedings of the above Association, which held its sixth annual session in Hartford recently, we extract the following:

Prof. W. D. Whitney, of Yale College, presented a paper on "The Relation of Vowels and Consonants, and certain Inferences from it."

The special characteristic of human speech, Professor Whitney said, is that it is *articulate*. This means, really as well as by derivation, that it is broken up into *articuli*, or joints, and thus made both distinct and flexible; or it is syllabic. A language of more tone-sounds, shading and varying into one another, and a language of mere explosions and buzzes, would alike be wanting in the needed qualities. Articulate or syllabic effect may be variously given; imperfectly, by change from vowel to vowel; more distinctly, by a hiatus between vowels; but practically and prevailingly, by the intervention of closer sounds, or consonants, between the opener sounds or vowels. For example, *a* may be indefinitely prolonged as only one syllable; but break it open with a consonant, as *apa*, *ala*, and the effect is dissyllabic. This brings to light the essential distinction of vowel

and consonant: one is an opener sound, the other a closer; all the current definitions, so far as they are true, are founded upon and imply this. If all vowels were equally vocalic, and all consonants equally consonantal, there would be reason for treating each division as a separate system. But this is not so; there are degrees in each class, and the two shade into one another, with a class of sounds (especially *r*, *l*, *n*) in the middle, which are capable of serving either office. In *lap* we have a central openest sound, to which the less open *l* and the yet closer *p* are felt only as accessories; in *alp* we have a transition from openest to closest through an intermediate degree, and it is still a single syllable; but arrange the same sounds in the order *apl* (i. e. *apple*), and the word is dissyllabic, because there are two sounds of sufficient openness separated by a closer. This principle in the formation and division of syllables was further explained and illustrated by diagrams on the black-board.

A true physical scheme of the alphabet was one which illustrated this relation of vowel and consonant, by arranging all sounds between the openest sound, *a* (as in *far*) and the three closest, the mutes *k*, *t*, *p*, in classes according to their degree of closeness, and in lines according to the organs used in forming them, somewhat as follows:

		a		
	æ	à		
	e	e	o	
	i		u	
	y		r, l	
h	ng		n	w
	zh		z	
	sh		s	m
			dh	v
			th	f
			d	b
	g		t	p
	k			

This arrangement was of value also in order to cast light upon the historical developments of the alphabet. The extreme sounds, *a* and the mutes, are those which prevailed in our earliest language, and the alphabet has been filling up since with the intermediate sounds. This is not because the latter are in themselves easier of utterance; but because, in rapid and fluent utterance, there is less expenditure of force in making the constant transitions between medial than between extreme positions. Thus the stream of breath is reduced in fullness, and its divisions are made less deep and absolute. Thus whereas in oldest Indo-European the open *a* (*of far*) formed over 30 per cent of the whole utterance, in English it is only half of one per cent, if even that, and the thinnest and closest of the vowels, short *i* (*hit*) and short *u* (*but*), have become by far the most common. This is, in its way and degree, a degradation of the phonetic form of language, a sacrifice of clearness and distinctness to fluency and suppleness; but we probably have not to fear that it will go so far as seriously to harm the character of our speech.

Prof. Whitney also read a paper on "Proportional Elements of English Speech."

The professor had taken five standard English works in verse—Shakespeare's Julius Cæsar, Milton's Paradise Lost, Bryant's Thanatopsis, Tennyson's In Memoriam, Gray's Elegy—and five in prose—the Bible, Johnson's Rasselas, Goldsmith's Vicar of Wakefield, Carlyle's Sartor Resartus, and Macaulay's Essays—and had read aloud in each till he had given utterance to 1,000 sounds, about equivalent to 35 lines of verse. The occurrences of each sound of the language were then noted, and the number of times in which each was found on an average in a hundred sounds was easily calculated and exhibited in the following table :

Sounds.	Occurrences in 100 sounds. Consonants. Vowels	Sounds.	Occurrences in 100 sounds. Consonants. Vowels
r	7.44	ō (long)	1.76
n	6.76	p	1.74
t	5.93	b	1.61
i (short)	5.90	é (a in make)	1.61
e (u in but)	5.66	â (in all)	1.54
d	4.94	sh	.86
s	4.69	au (ow)	.83
l	3.84	g	.79
dh (th in that)	3.83	ng (nasal)	.79
e (short)	3.34	y (consonantal)	.66
æ (a in hat)	3.32	th (in thin)	.58
m	3.06	a (a in far)	.56
z	2.92	ch (in char)	.53
i (i in machine)	2.80	ae (a in care)	.47
â (o in not)	2.59	j	.47
v	2.37	u (as in pull)	.41
h	2.34	l (semi-vowel)	.35
w	2.31	n (semi vowel)	.16
k	2.17	âi (diphthongal)	.12
f	2.06	ö (short)	.08
ü (oo in tool)	2.00	zh	.02
ai (i in pile)	1.91	Totals,	62.71 37.2
e (u in hurt)	1.85		

The ratio of vowels to consonants was found to be 1 to 1.682; and the average number of syllables in a word, 1.358. Several interesting comparisons were made, and many calculations as to the frequency with which different kinds of sounds are used, were shown on the blackboard.

NATIONAL EDUCATIONAL CONVENTION.

The National Educational Convention began its sessions at the Opera House in Detroit, on Wednesday, Aug. 5. It was called to order by Prof. S. H. White, of Peoria, Ill. A brief address of welcome was delivered by Duane Doty, superintendent of the Detroit schools, and responded to by the president. After the appointment of assistant treasurers and secretaries, the regular order was taken up. The president, George P. Hayes, of Washington and Jefferson College, Pennsylvania, made a report from the committee on intermediate schools, appointed at the last meeting of the association. The report looks mainly to the high schools to fill the void between the common schools and the col-

leges, but also discusses the academical system of education, its expense, and the more feasible methods of sustaining it. The report was discussed at length by Prof. Ried, of Ohio, Dr. Hammond, of Massachusetts, Mr. Cork, of Columbus, Ohio, Dr. Harris, of St. Louis, and others, after which a resolution, moved by President Wallace, of Monmouth College, Ill., was passed, adopting it and commending its principles. A committee was then raised to consider and report upon the question of courses of study in high schools.

The afternoon session of the association was held in four separate departments, meeting in different halls.

The department of Higher Instruction was presided over by President Reed, of the University of Missouri, with President Hayes as its secretary. Prof. A. P. Peabody, of Harvard College, read a paper upon "Elective Studies in Colleges and Universities," which was discussed by Prof. Olney, of Michigan University, President Wallace, of Monmouth College, President Taylor, of Worcester University, Ohio, and others. Its strong commendations in favor of elective studies were generally agreed to.

In the department of Normal Schools, James H. Hoose, principal of the State Normal School, Cortland, N. Y., presided. Prof. John Ogden read a paper on "What constitutes a consistent Course of study for Normal Schools?" which was debated at length, but upon which no action was taken.

In the department of Elementary Instruction, Miss Hattie Cummins, of Wisconsin, presided. The Hon. E. E. White, school superintendent of Toledo, Ohio, read a paper on "Several Problems in good School Management."

The department of Superintendence transacted no business, and adjourned subject to the call of the chairman. At the evening session an address was delivered on "The Profession of the Teacher," by the Hon. R. Abbot, principal of the Bellevue High School, Virginia. Committees were appointed on resolutions, honorary members, teachers and teachers' salaries, and courses of study in high schools. The latter consists of W. T. Harris, of Missouri; W. T. Phelps, Minnesota; Eli T. Tappan, Ohio; D. F. Tweed, Massachusetts; and Isaac Wellington, Michigan.

The session of Thursday, August 6, began at 8:30 a. m., the first hour being given to the discussion of the paper read by President White, of Cornell. Its argument against sectarian colleges was warmly attacked by Mr. Hammond, of Massachusetts, and defended by President Wallace, of Illinois. The Hon. E. E. White, of Ohio, and President Hays, of Pennsylvania, also took part in the debate, which was closed by President White in a brief speech. Some remarks were made by Gen. John Eaton, Commissioner of Education. The question of sex in education was then taken up, and three papers were read, more or less directly bearing upon the question, by Dr. E. H. Clarke, of Boston, the title

of whose paper was "The Building of a Brain;" by Prof. James Orton, of Vassar, on "Four Years at Vassar College;" and by Prof. J. M. Hosmer, of the University of Missouri, on "Co-education of the Sexes in Universities." Professor Orton's paper was a very interesting presentation of the facts in regard to Vassar College, and was warm in favor of higher education for women, but against co-education. Professor Hosmer mentioned the history and experience of co-education with many illustrated incidents, and drew conclusions favorable to it as the only practical way to secure the higher education to women. He thought, however, that the arguments as to the good effects of co-education were overdrawn.

In the department of Higher Instruction, a paper was read by Prof. James D. Butler, of Madison, Wis., on "Classical Studies in Higher Institutions of Education." Professor Patterson, of the University of Kentucky, read a paper on "University Endowments," attacking sectarian schools. This question was warmly debated in the section of Superintendence. Superintendent Rickoff, of Cleveland, made a report on blanks for city statistics, and the department adjourned to meet in Washington as an independent body.

In the department of Normal Schools, Professor Hailmann, of William, read a paper by Mr. Soldan, of St. Louis, on "Method and Manner."

In the department of Elementary Instruction, Miss A. C. Martin, of Boston, editor of *The Massachusetts Teacher*, read a paper entitled, "What shall we Attempt in our Elementary Schools?" and Miss Peabody, of Massachusetts, read a description of the working of the "kindergarten" schools.

In the evening speeches were made by several gentlemen, among them a Mr. Hunter, a colored man from North Carolina, who learned his letters in 1867; Mr. Riggs, the Mormon School Superintendent of Utah, and Mr. Hodgens, of Canada.

Resolutions were adopted tendering thanks for hospitalities. The following are the only two which are expressive of opinion:

Resolved, That this Association reaffirms the declaration of opinion voted at its last annual meeting, that the proceeds of the sales of the public lands should be set apart by Congress, under such conditions as it may deem wise, as a perpetual fund for the support of public education in the States and territories.

Resolved, That this Association is earnestly in favor of the establishment of a true national university.

The following committee was appointed to urge further the project of a national university.

J. W. Hoyt, Wisconsin; A. D. White, New York; John Hancock, Ohio; W. T. Harris, M. O. David, A. Wallace, Illinois; Mark Hopkins, Massachusetts; Joseph Henry, Washington; W. F. Phelps, Minnesota; D. F. Boyd, Virginia; A. Hogg, Alabama; G. Hayes, Pennsylvania; Z. Richardson, District of Columbia.

Richmond, Va., was agreed on for the next meeting,

and the convention adjourned. The delegates present at the meeting numbered over 600, and represented twenty nine States and two territories.

THE VELOCITY OF RIVERS—The velocity of a river depends upon the inclination or fall of its course, and its surface velocity can be ascertained by determining the rate of that fall per mile, and *vice versa* we can ascertain the inclination by measurement of the surface velocity. But, as every one who has stirred up the bottom of a brook has observed, the surface-current flows faster than the under current. The particles of sand at the top of the water are always carried some distance beyond those at the bottom. This retardation of the under-current is caused by the friction of the water against the bottom and sides of the brook. While, therefore, it is easy to measure the velocity of the surface-current, it is difficult, because of this retardation beneath, to determine the mean velocity or actual flow of the river. This has never been satisfactorily done before. Many experiments, with a view to the accomplishment of this end, have indeed been made by eminent men, but they have failed to establish the relationship between the depth of the stream and the velocity of the flow. M. Révy has established that the velocity of the current is directly proportionate to its depth, diminishing or increasing therewith. "Thus if a shoal occurs in the middle of a channel, the velocity of the current over the shoal is less than that of the deeper water on either side; and this diminution of speed is proportionate to the loss of depth. So direct is this relation, that a plan of the surface velocities, if projected on an appropriate scale, coincides very closely with the section of the bottom of the river. Any want of parallelism between the two curves is capable of explanation either by the curvature of the banks, or by some physical irregularity of the channel." It was determined by actual experiment that the greatest velocity of current is at the surface, and the least at the bottom, and that the increase of velocity "is in the simple ratio of the distance from the bottom." This decides that the mean velocity of a stream is to be found at half its depth. A result perfectly consistent with the previously expressed law that surface velocity is proportionate to depth, it is in fact a corollary, and one that was verified by experiment.

ICE AND WATER EROSION.—The gorge of Niagara River, below the falls, is perhaps the grandest known example of a valley eroded by water in compact rock; yet, comparing equal lengths, the glacier-eroded valley of Yosemite is a hundred times as large, reckoning the average width of the former 900 feet, and depth 200. But the erosion of Yosemite Valley, besides being a hundred times greater, was accomplished in hard granite, while the Niagara was in shales and limestone. Moreover, Niagara cañon, as it now exists, expresses nearly

the whole amount of erosion effected by the river ; but the present Yosemite is by no means an adequate expression of the whole quantity of glacial erosion effected there since the beginning of the glacial epoch, or even from that point in the period when its principal features began to be developed, because the walls were being cut down on the top simultaneously with the deepening of its bottom. We may fairly ascribe the formation of the Niagara gorge to its river, because we find it at the upper end engaged in the work of its further extension toward Lake Erie ; and for the same reason we may regard glaciers as the workmen that excavated Yosemite, for at the heads of some of its branches we find small glaciers engaged in the same kind of excavation. Merced cañons may be compared to mortises in the ends of which we still find the chisels that cut them, though now rusted and worn out. If Niagara River should vanish, or be represented only by a small brook, the evidence of the erosion of its gorge would still remain in a thousand water worn monuments upon its walls. Nor, since Yosemite glaciers have been burned off by the sun, is the proof less conclusive that in their greater extension they excavated Yosemite, for, both in shape and sculpture, every Yosemite rock is a glacial monument.

—John Muir, in Overland.

BLUE SKY AND WHITE CLOUDS.—The ethereal blue color of the sky is due to minute particles of matter which float in the air. Were these particles removed, the appearance of the sky would be dead black. It is a fact in optics that exceedingly fine portions of matter disperse or scatter the blue rays of light, coarser portions scatter red rays, still coarser portions scatter all the rays, making white light. The atmosphere is full of aqueous vapor, the particles of which diffuse white light in all directions. When these particles are enlarged, they become visible in the form of clouds. The vapor particles of the white clouds are supposed to be finer and lighter than those of the dark clouds. That the diffusion of light in our atmosphere, the blue coloring of the sky, and the colors of the clouds, are due to the presence of matter floating in the air, has been conclusively proved by Tyndall. On passing a beam of sunlight through a glass tube, the beam is rendered brilliantly visible by the reflection of light from the dust particles floating in the air contained in the tube. But on removing the dust particles, which is done by filtering the air by cotton wool, or causing the air to pass over a flame, the beam of light is no longer visible in the tube.

[“Hydraulics of Great Rivers,” in *Pop. Science Monthly*.]

SPAULDING, Yale '70.—Randall Spaulding, who was for two years principal of the Rockville High School, and has spent the last year in Germany, has declined the appointment of tutor in Yale College, and accepted the position of principal of the High School in Montclair, N. J.

THE CONN. SCHOOL JOURNAL.

Office, No. 7 Insurance Building, opposite Park.

NEW HAVEN, CONN., SEPTEMBER, 1874.

OUR printer seems to have taken advantage of our absence in vacation to raise a laugh at our expense. In our first editorial paragraph in the August number we were made to say “sargassa” and “post-vellum” for “sargasso” and “post-bellum,” on account of which substitutions our meaning was slightly obscured. However, as our chirography bears a stronger resemblance to Horace Greeley's than to Professor Gaskell's, we must really condone the errors.

WE are glad to head the columns of this number by the lines from the gifted pen of the Rev. James K. Lombard. Although the place of their delivery was at Springfield, we may almost claim them for Connecticut, for Springfield has an organic connection with our State as a part of the Connecticut Valley. As Mr. Lombard is now again resident in Connecticut, and has had a ripe experience as a teacher, we shall hope for as frequent communications from his pen as the cares of a parish will allow.

THE present experiences of teachers and the present requirements of schools, make it more imperative than ever that any teacher who desires to stand high in the profession, should seek for himself the most liberal culture possible. Many schools to-day require of their instructor the handling of a considerably larger range of subjects than the same schools did five years ago. This extension of requirement is especially marked in respect to Latin, Natural Science, Free-Hand Drawing, Music, and the improved methods of teaching Reading and Spelling to primary classes. It is not a rare occurrence for a teacher who has won the highest success, and the affection also of the community, to lose the school where he has earned his honors, by the sudden requirement, perhaps introduced by the influence of a personal enemy, of one of these branches hitherto untaught. A wise teacher will therefore seize the first opportunity to acquire the rudiments at least of any branch possible in our common schools, of which he may be ignorant. Self-teaching, with a little first-class outside assistance, will often accomplish much. And it is better for a teacher to increase the scope

of the branches of his culture, even though he must thereby be content with the rudiments of some, than to develop himself strongly in certain departments to the entire exclusion of others equally popular. Thus one who makes himself a connoisseur in Natural Science, patronizes Penikese, and ranges over New England as a "collector," in ignorance all the while of a single declension of the Latin grammar, may satisfy himself the better, but is training himself away from eligibility as principal of many of our large graded country schools. The same might also be the case if he should perfect his Latin at the expense of science. The well-balanced teacher is the one for the times.

HERE is a piece of one's mind given without reserve. The *Illinois Schoolmaster*, in giving an account of the recent meeting of the National Teachers' Association at Detroit, remarks as follows:

"It would be difficult to conceive of anything more flat, stale, and unprofitable, than the exercises of the Normal Department. Most of the papers that we heard were wretchedly dull, and in the discussions the same old bundle of chaff was threshed over that has had its annual pounding in the same section for the last fifteen years."

What could have ailed our brother editors of the *Illinois Schoolmaster*, that they failed to take in the flashing wit, the masterly expositions of true principles, and the enthusiastic "esprit du corps" which invariably characterize the sessions of the Normal Department? Is it not possible that in the very uncomfortably crowded state of the city hotels, mentioned in the same article, these editors had to put up at some fourth-rate establishment, and thereby were so laden inwardly with indigestible meals that to their dyspeptic nerves, Demosthenes delivering his Oration on the Crown, would have seemed insufferably insipid? At any rate we are glad we were not at our post on this occasion at Detroit, in the Normal Department, for we shudder to think how narrowly, by our absence from the meetings, we escaped coming under the lash of the above remark.

SERIOUSLY, we think that the Normal Department of the National Teachers' Association should either be abolished or much curtailed. In this department, the minds of the teachers seem to be so thoroughly established, that there is comparatively little desire to learn from the experiences of others; the experience of past years seems also to show that nothing more than general, very discursive, and

very profitless discussions are possible among the assembled Normalites; again, from the very nature of the department the membership is by far the smallest of any of the sections, and the attendance is consequently exceedingly meagre; if, then, there happens by chance to be read a paper of rousing interest, it is in danger of being almost wasted upon an insignificant audience; and—most important reason of all,—Normal instructors need, almost more than others, the discipline of the papers and discussions of the other sections,—particularly, eminently, and pre-eminently of the primary departments; but owing to the meagre membership and attendance on the Normal Section, many of the Normal corps feel constrained to attend constantly on the doings of their own section, uninteresting though these may be, thus losing what might be of far more practical value to them.

If we must continue this Normal Section, let its labors be limited to a single half-day session, at least until its proceedings shall have become sufficiently spirited and profitable to deserve more time.

PERSONAL.

It is to be regretted that our State is to be deprived of the services of two so able and successful educators as Mr. N. H. Whittemore, of Norwich, and Mr. Randall Spaulding, of Rockville. The former gentleman, we are told, has an appointment in Lancaster, Mass., and the latter is principal of the High School in Montclair, N. J. Mr. Spaulding was tendered a tutorship in Yale College, as stated in our last, but probably he felt that he could not afford to accept the honor.

MISS JULIA L. SAWYER, daughter of Rev. Henry E. Sawyer, of Middletown, has taken charge of the West Point Officer's Family School, at West Point, N. Y. We know this, by personal experience, to be a choice position.

MR. JOSEPH R. FRENCH leaves the academy at Thomaston to accept the principalship of the Center School in Meriden.

IS YOUR SUBSCRIPTION PAID? Nine months of this year are passed. If you find this paragraph marked, please brush up your memory, and remit \$1.75 by return mail.

ANNALS OF EDUCATION.

CLINTON.—Owing to press of other matter, we were obliged to postpone from the August number the following notice: The closing exercises of the Morgan School, which occupied Thursday and Friday, July 2 and 3, presented some noteworthy features. The annual examinations were conducted with much success. In connection with these were compositions for prizes, that in declamation taking place in the large and fine audience hall of the school, Thursday evening, in the presence of a closely packed audience, many being unable to gain even an entrance.

The noble patron of the school, Mr. Charles Morgan, has recently given to the trustees a \$10,000 five per cent. gold bearing bond, the income of which may be given in prizes as shall seem most advantageous to the Trustees and Teachers of the school. A portion of this magnificent fund was won by the following contestants:

For Declamation.

1st Prize (\$50 gold medal), Belle A. Meigs, Madison.

2nd " (\$20 gold coin), Asa H. Wilcox, Clinton.

3rd " (\$10 " "), Joseph H. Stannard, Clinton.

For Essays.

1st Prize (\$50 gold medal), Fannie C. Elliot, Clinton.

2nd " (\$20 gold coin), Florence G. Johnson, Brooklyn, N. Y.

5rd " (\$10 " "), Lizzie A. Root, Coventry.

For Penmanship—Room No. 2.

Best writer, Mary E. Griswold, silver medal.

2nd best writer, Laura Whittemore, \$3 gold coin.

Greatest improvement, Jennie E. Huntley, \$5 gold coin.

2nd greatest improvement, Walter H. Wright, \$3 gold coin.

Room No. 3.

Best writer, Eben H. Buel, silver medal.

2nd bes. writer, Susie A. Redfield, \$3 gold coin.

Greatest improvement, Susie A. Redfield, \$5 gold coin.

2nd greatest improvement, Charles H. Kelsey, \$3 gold coin.

Room No. 4.

Best writer, Fannie C. Scranton, silver medal.

2nd best writer, Freddie L. Buell, \$5 gold coin.

Greatest improvement, Jennie E. Wright, silver medal.

2nd greatest improvement, Addie F. Lewis, \$5 gold coin.

The graduation of the *first* class in the history of this school was an event of much interest to its teachers and friends. Although this graduating class numbered but one, his teachers are very proud of him. His name is Joseph H. Sperry, of Clinton, and he has since been appointed assistant principal for the ensuing year.

Mr. Morgan's presence added much to the pleasure of the occasion; he expressed himself as highly gratified with the exercises.

On Friday evening, the Superintendent, Mr. E. C. Winslow, who is so successfully building up this school, was presented by the teachers and pupils

with two of Rogers' elegant statuettes, "The Favoured Scholar," and "The Foundling."

The school sustains a loss in the withdrawal of Miss Hattie M. Willard, late teacher of Mathematics, who, we believe, is promoted into domestic life.

AMERICAN INSTITUTE OF INSTRUCTION.—The forty-fifth session of this pedagogic corps was held at North Adams, Mass., July 28, 29, and 30. The lectures and papers which furnished themes for discussion were as follows: Waste of Labor in the Work of Education, by Dr. Paul A. Chadbourne; School Management on Business Principles, by Henry E. Sawyer; School Supervision, by Hon. Thomas W. Bicknell; Illustrations of Anarchy, by Samuel Thurber; The Louisiana Purchase and some of its Results, by W. A. Mowry; The Relations of the Secular and the Religious in Education, by Prof. Julius H. Seelye; Thought and Expression, by A. H. Davis; The Need of Collegiate Education for Women, by Rev. L. Clarke Seelye; The True Ideal of Teaching, by Anna C. Edwards.

BOOK NOTICES.

THE BIBLE LOOKING-GLASS, Reflector, Companion, and Guide to the Great Truths of the Sacred Scriptures, and illustrating the Diversities of Human Character, and the Qualities of the Human Heart. Consisting of six books, in two parts, profusely illustrated by object-teaching pictures, showing the pain and misery resulting from vice, and the peace and happiness arising from virtue. Bradley, Garretson & Co., publishers, 66 North Fourth street, Philadelphia, Pa.

The Bible Looking-Glass consists of six different books in one thick volume, of nearly 600 cap quarto pages and 170 engravings, the frontispiece being a large folding copper-plate, entitled "The Voyage of Life." Four of these books are books of Religious Emblems; the fifth book is the Sunday Book of Pleasing and Comforting Literature; and the sixth book Gray's Elegy, illustrated with a beautiful miniature engraving to each of the thirty-two verses of that world-famous poem. This book is unique among all the religious works published in this country. The only book resembling it that we remember is "Quarles' Emblems," published a century ago, perhaps, in England. The *Bible Looking-Glass* enforces the principles of religion by appeals to the eye and to the imagination, as well as to the

understanding. The contrasts between the Christian virtues and their opposite vices, between true and false principles, right and wrong living, are presented pictorially, with an originality, force, and vividness that cannot fail to be effective. It is a book for old and young, for the ignorant as well as the educated. We have no hesitation in recommending to parents and teachers to send for it. Its influence cannot be otherwise than good. It is sold only to subscribers, and may be had of agents, or through the publishers of this JOURNAL, or of the publishers. The author is a Connecticut man, and agents are desired in this State. Any one may engage in the sale of this book in the confidence that he is doing a good work, as every good book sold keeps out a bad one. Price to subscribers, \$3.75.

GUYOT'S GEOGRAPHICAL SERIES: Grammar School Geography. New York: Scribner, Armstrong & Co.

According to Professor Guyot, "The nature of the mind is such that the acquisition of knowledge is always gradual. That gradual progress, whatever be the object of our study, has three main stages. * * * * * The first stage, especially in the study of the globe, and in all sciences of observation, may be called the *perceptive* stage; the second, the *analytical*; the third, the *synthetic*. The first is preparatory; the second constitutes the bulk of the study; the third is the scientific and final stage of perfected knowledge. * * * * * It is in accordance with the views expressed that these text books have been prepared."

The *Elementary* and *Intermediate* present, in mode and substance, instructions adapted chiefly to the needs of pupils in the *perceptive* stage of progress; the *Grammar-School* responds to the wants of the learner in the *analytical* stage; while the *Physical Geography* prepares his mind for a *synthetic* study of nature, by rising to the consideration of the laws which govern natural phenomena." This new work will be welcomed by thousands of teachers. The grand principles that underlie the teaching of its renowned author are understood and appreciated by intelligent educators, and great anticipations were raised in respect to this work, which was to be the fruit of his ripe learning and his experience of the application of his principles in the earlier book of the series to the business of elementary instruction. No just expectation has been disappointed. The study of Political and

Physical Geography in the Grammar School has been put on a scientific basis, and the book in its general plan, as well as in the working out of its details, leaves little to be desired.

All that artists, engravers, and printers could do to make an attractive book has been done. The pictorial illustrations combine beauty and instruction. The maps are of wonderful beauty, and by the system of coloring peculiar to Guyot's works have somewhat the effect of relief-maps in teaching the topographical and physical features of the various countries. They are thirty-six in number, are very full, and probably are unsurpassed in any respect in school geographies published in this country. Among the specially good points in the minor details of the work is the arrangement of the matter relating to cities and chief towns in *tabular* form, under the heads of "*Population, Location, Advantages, and Leading Interests*," by which arrangement the most important facts can be more clearly and impressively presented to the eye and mind than in usual form of description. An excellent suggestion made to the teacher is, that the pupil be required to prepare a topical analysis of each section of the descriptive text, examples of which are afforded by the author by analyses of the first twenty sections. The diagrams and directions for map drawing are sufficiently clear and full for those who make use of this system. For ourselves we prefer a simpler system for this department of geographical study, the object being simply to impress the great features of each country indelibly upon the memory, rather than to attempt extreme accuracy in minute particulars.

Much more of good might justly be said of this Grammar School Geography, and of the series to which it belongs.

ANNUAL REPORT OF THE BOARD OF EDUCATION
OF THE NEW HAVEN CITY SCHOOL DISTRICT,
for the year ending Aug. 31, 1874.

This report consists mainly of a brief and comprehensive statement of the progress of the past year and the condition of the Schools, together with the usual statistics. It is a business-like document, and impresses the reader with the conviction that the work of the school officers is faithfully and economically done.

During the past year, two school-houses have been built, seating respectively 216 and 634 pupils, and costing together about \$62,000. Yet the District is reported out of debt, and the Board are able now to say, for the first time in twenty years,

that there is a seat somewhere for every child that wishes to attend school.

Within the last six years the district has expended more than a quarter of a million of dollars in new school-buildings.

In the mean time, while doing this, and also adequately sustaining the schools, successive Boards have reduced the district tax from 4 mills to $2\frac{1}{2}$ mills on the dollar. Total expenses the past year, \$260,335.12; number of children of legal age, 12,724; number of children schooled during the year, 9,835; number of teachers employed (day school), 194.

THE AMATEUR ACTOR. A Collection of Plays for School and Home. By W. H. Venable, author of "A School History of the United States," etc. Wilson, Hinkle & Co.; Cincinnati & New York.

This little volume forms a very fitting sequel to the "School Stage," by the same author. The selections, twenty-three in number, are chiefly from standard authors, no less than four being from Shakespeare, two or more from Douglas Jerrold and Steele, Sheridan, Horne, John Tobin, and other famous authors are represented. The immortal Red Riding Hood is there also. The pieces are mostly humorous, but coarseness in scenes and expression has been carefully avoided, and the book will commend itself to those in want of collections for parlor plays, or school exhibitions, of a little higher tone than the average of such works. The directions as to stage, scenery, costumes, movements, etc., are ample and intelligible; the illustrations are very suggestive and exceedingly well executed.

THE WOMEN OF THE ARABS, with a Chapter for Children. By Rev. Henry Harris Jessup, D.D. Published by Dodd & Mead, New York City.

Mr. Jessup's experience of seventeen years as a missionary of the A. B. C. F. M. in Syria, enables him to speak with authority on the subject of Arab character and religions. This book is of that happy combination of theme and style which will make it alike acceptable to the popular mind and to the more scholarly reader. The pages are full of incidents, descriptions of character, and other sprightly matter, while they also contain scientific expositions of the creed of the several leading sects of Syria, especially as relating to the status of womanhood. This is an excellent book for Sunday reading, while it will also be found a good reference book for the schoolroom on certain Oriental ideas, and the Oriental treatment of women.

ELEMENTS OF THE ENGLISH LANGUAGE: An Introduction to the Study of Grammar and Composition. For common schools. By Bernard Bigsby, Univ. Oxon., Superintendent of Public Schools, Port Huron, etc. Boston: Ginn Brothers, publishers; 1874.

Text-books of the class represented by this little work are becoming numerous, and it is a hopeful sign that they are. Mr. Bigsby's book is, to our mind, the very best "Introduction to the Study of Grammar and Composition" that has yet come under our notice, and great profit will result from the mastery and application of its method wherever accomplished by public school teachers.

THE LITERARY READER: Typical Selections from the best British and American Authors. By George R. Cathcart. Published by Ivison, Blakeman, Taylor & Co., New York and Chicago.

The selections in this book range through the whole literature of our language from Shakespeare's day to our own. Four hundred and two pages full of literary gems are here put into the hands of the reader. Of its kind it is a work of the highest excellence, and one which every teacher will welcome. The neat binding and the elegant paper and typography contribute their appropriate share in making this a very choice book for the schoolroom.

MANUAL OF FRENCH POETRY, with Historical Introduction and Biographical Notices, for the use of School and Home. By A. H. Mixer, A.M. Published by Ivison, Blakeman, Taylor, & Co.: New York and Chicago.

We know of no better book of the kind. The selections are very choicely made, covering the whole era of French literature. The paper, print, and binding are also so excellent, that the little inexpensive volume has a very winsome appearance.

THE NORMAL DEBATES: Designed for the use of all Common Schools, Academies, and Colleges, as well as a guide for Teachers' Institutes and business meetings in general. By O. P. Kinsey, Professor of English Literature, in charge of Forensic Exercises, National Normal School, Lebanon, Ohio. Cincinnati: Geo. E. Stevens & Co., Publishers, 1874.

This "Debates" presents in admirably clear style that which many find it very hard to understand. We prize our copy of this little work, and expect to refer to it with satisfaction many times in the future.

BOOKS RECEIVED.

"Peck's Complete Arithmetic, Theoretical and Practical." By William G. Peck, LL.D., Professor of Mathematics and Astronomy in Columbia Col-

lege. A. S. Barnes & Co., New York and Chicago. 90 cents by mail, post paid.

"Requisites to a Reform of the Civil Service." By Dr. J. W. Hoyt, President of the Wisconsin Academy of Science, Arts, and Letters.

"Report of the Curators of the University of the State of Missouri, containing Catalogue Announcements," etc., for the year ending June 24, 1874.

"Origin of the Theological School of Yale College." By Prof. William C. Fowler, LL.D. 26 pp.

"Necessity of Rewards for the Detection of Crime." Speech of General Benj. F. Butler on the Frauds on the Revenues of the Government. H. R., June 19, 1874.

"Annual Register of the Rensselaer Polytechnic Institute." Troy, N. Y., 1874.

"Illustrated Catalogue of Books on Architecture." A. J. Bicknell & Co., publishers, No. 27 Warren street, New York city.

"Catalogue of Books and other Publications of the American Sunday School Union." Revised edition. 40 pp.

"Catalogue of New and Choice Books," Published by Am. S. S. Union. New York: G. S. Scofield, Nos. 8 and 10 Bible House, 4th avenue.

"Catalogue of the Mississippi College," Session 1873-74. Vicksburg, Miss.

"Catalogue of the Young Ladies Athenaeum." Jacksonville, Ill., 1873-74.

"Catalogue of the North Missouri State Normal School." Kirksville, Mo., 1874-5.

"Catalogue of the East Tennessee Wesleyan University," 1873-74.

"Official Register of the Virginia Military Institute." Lexington, Va., 1873-74.

THE UNCOVERING of the monument to Laurent Clerc at Hartford, on Wednesday, Sept. 16, was an occasion of much interest. The *Hartford Courant* gives a full account, from which we take the following: The memorial is a fine bust of the distinguished Clerc, surmounting a granite monument of handsome proportions and design. On the south side of the monument, facing Asylum avenue, are the words:

LAURENT CLERC,
The Apostle
Of the Deaf Mutes of the
New World.

Directly under this is a *bas relief* in bronze of the name of "Clerc," each letter being represented by a hand denoting it in the sign language. On the east side is the inscription:

LAURENT CLERC, A.M.,
Born in La Balme, France,
December 26, 1785,

Landed at New York, Aug. 9, 1816,
Died at Hartford,
July 18, 1869.

And on the west side is the following:

Erected by the Deaf Mutes of America
To the memory of their Benefactor;
the pupil of Sicard;
the associate of Gallaudet;
Who left his native land to
Elevate them by his teaching and
Encourage them by his example.

The simple ceremony of unveiling was all that took place on the grounds of the asylum, and this was done by Miss Lottie Beers, a granddaughter of Clerc.

The exercises at the church were: Prayer in the sign language, by Rev. W. W. Turner, formerly principal of the Hartford Asylum. Thomas Brown, of New Hampshire, then made the formal presentation of the monument from the society, of which he is president, and through whose efforts the memorial was secured to the Hartford Asylum; and his address in signs was translated by Mr. John Williams, one of the teachers at the Asylum. To this Hon. Calvin Day, president of the American Asylum, replied.

The orator of the day, Mr. James Denison, president of the Columbia institution at Washington, D. C., was then introduced. From his excellent address we extract the portions more directly referring to Mr. Clerc's present history:—

"The record of Mr. Clerc's life from the date of his arrival in America until his death, fifty-three years afterwards, is a familiar one to every educated mute. With the exception of a few months, at three different times, spent in visiting his native country, forty-one of these years were passed in the faithful and successful performances of duty as an instructor in the American Asylum. In the annual reports of that institution, where Mr. Clerc's name, from first to last, heads the list of the corps of instructors, repeated and honorable mention is made of his assistance in soliciting funds, of his valuable aid in training teachers for the Hartford as well as other schools, of the high estimate in which his labors and counsels were held by the board of directors. The board at various times gave evidence of their sense of his important services by the bestowment of special favors and appropriations; and in 1858, when in his seventy-third year, he closed his active connection with the asylum, he retired in the receipt of a pension for life from its funds.

"From this time Mr. Clerc spent his days in peaceful enjoyment of the rest he had so well earned. 'Happy in his domestic and social relations,' writes the Rev. Mr. Turner in the *American Annual*, 'he might be seen in the streets, in the post-office, and the reading rooms of Hartford almost every day, meeting his friends with a pleasant smile and graceful salutation; and expressing a deep interest in public events relating to the welfare of the country, and especially to the prosperity of the asylum.'

"In June, 1864, Mr. Clerc, then in his 79th year, in spite of his many infirmities and the length and fatigue of a journey that would have deterred a younger man, traveled from his Hartford home to Washington, the capital of our country, in order to be present at the inauguration of the National Deaf Mute College. He delivered a thoughtful and interesting address, closing with the earnest hope that 'in his great work, his dear young friend, Edward M. Gallaudet, might be blessed and prospered, and receive for his efforts in behalf of the deaf and dumb such proofs of its benefits as would reward him for the glorious undertaking.'

"Thus was Mr. Clerc permitted in his last days to behold the highest and grandest point reached in the cause of deaf-mute instruction—like Moses of old, after forty years of guidance and patient waiting to look upon the promised land and give his dying blessing.

"In his 84th year, Laurent Clerc, on the 18th of July, 1869, finished his earthly life, passing away in the hope of the Christian's immortality. His wife, faithful companion of half a century, and two children in mature life survive, witnesses of the universal regard and affection in which his memory is held, and of the gratitude with which it is embalmed in the hearts of those whom his sacrifices and labors have benefited."

INSTITUTE JOTTINGS.—The following "Institute Jottings" were adopted by a Teachers' Institute at Beaver, Pennsylvania. They will be found useful everywhere:

- Never be late at school.
- Make few, if any, rules.
- Never allow tale-bearing.
- Avoid governing too much.
- Visit the schools of others.
- Never punish when angry.
- Never magnify small offenses.
- Cultivate a pleasant countenance.
- Never be hasty in word or action.
- Teach both by precept and example.
- Never let a known fault go unnoticed.
- Require prompt and exact obedience.
- Labor diligently for self-improvement.
- Encourage parents to visit the schools.
- Subscribe for some educational journal.
- Never compare one child with another.
- Never attempt to teach too many things.
- Never speak in a scolding, fretful manner.
- Make the school-room cheerful and attractive.
- Never let your pupils see that they can vex you.
- Banish all books at recitation, except in reading.
- Ask two questions out of the book for every one in it.
- Never trust to another what you should do yourself.
- Never indulge in anything inconsistent with true politeness.
- Never use a hard word when an easy one will answer as well.
- Never tell a pupil to do a thing unless convinced he can do it.—*Exchange.*

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NEW HAVEN, Conn., 1873.

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OUR FIRST HUNDRED YEARS:

The Life of the Republic Illustrated.

By C. EDWARDS LESTER.

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No such work exists, and it is needed by all classes of citizens.

It unfolds the most brilliant record of achievement ever made by a nation.

It covers the most interesting century in the history of the human race, and will be the first guide book of American progress yet produced.

It will be a permanent treasure-house of the trophies of National Glory, and, as a text-book for use in our schools and colleges, will combine History, Geography, Political Economy, and a Course of Reading, all bound in the chain of fascinating narration.

It will embrace the chief fruits of the literary labors of the lifetime of a thoroughly American Author, who has written with such power on National themes. The work is in glowing style; and while no important fact of our history is omitted, it never grows tedious by detail, nor dull by generalization.

OUR FIRST HUNDRED YEARS will be printed in the finest Library historic style; and will be issued in twelve monthly parts, of 64 or more pages each, making, when completed, July 4, 1875, an elegant royal 8vo volume, of about 800 pages. Being absolutely a subscription book, it can be had only through our authorized canvassing agents, who will deliver the parts to subscribers every month, and collect fifty cents, the subscription price.

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**BRYANT'S
CELESTIAL INDICATOR.**

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This is a new apparatus for facilitating the study of Astronomy. It is intended to illustrate clearly to children and to adults the various phenomena of the heavenly bodies—the motion of the earth around the sun, and the changes of the seasons; the earth's axial motion; the precession of the equinoxes; nutation; tides; eclipses, both solar and lunar; the change of the pole star; changes in the declin-
ation and right ascension of stars; the difference between the sidereal and tropical years; the retrogradation of the signs of the zodiac; the revolution of the moon's nodes, etc.

Accompanying the apparatus is a short Treatise on Astronomy, descriptive of the same, and illustrating how to use the instrument. An hour's time will enable the teacher to become familiar with the subject and with the instrument imparting more information by illustration, with the INDICATOR, than is usually gained by pupils during their entire course.

The apparatus is made of brass; is simple and durable in construction; is not liable to get out of order. It occupies about a cubic foot, and is carefully boxed for shipment to any part of the country. Price \$25.00. 365

The CONN. SCHOOL JOURNAL, New Haven, Conn., will give special terms on the INDICATOR during June and July. Write for particulars.

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Applicants for admission must be at least sixteen years of age, must declare their full intention of teaching in the public schools of Connecticut, and must pass a satisfactory examination in Reading, Spelling, Writing, Arithmetic, Geography and English Grammar.

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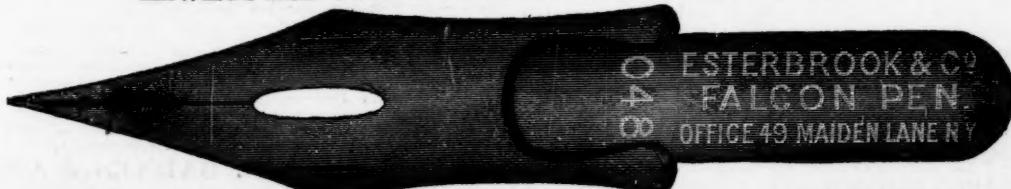
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